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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,372	07/18/2003	Shiro Akiyama	10517/178	4051
23838	7590	12/14/2006	EXAMINER	
KENYON & KENYON LLP 1500 K STREET N.W. SUITE 700 WASHINGTON, DC 20005			YUAN, DAH WEI D	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/621,372

Applicant(s)

AKIYAMA ET AL.

Examiner

Dah-Wei D. Yuan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 17-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**SEALING STRUCTURE OF FUEL CELL AND  
MANUFACTURING METHOD OF SAME**

Examiner: Yuan

S.N. 10/621,372

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December 8, 2006

**Detailed Action**

1. The Applicant's amendment filed on October 24 2006 was received. Claim 1 was amended.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on July 25, 2006.

***Claim Rejections - 35 USC § 103***

3. Claims 1-4,7,8,10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warszawski et al. (US 4,590,134) in view of Cisar et al. (US 6,533,827).

With respect to claims 1,17, Warszawski et al. teach a fuel cell stack comprising a plurality of separators (3), wherein the separators have protruding portions which are formed on end portions of the each of the separators. See Figures 1,17. However, Warszawski et al. do not teach the protruding portion contacts a reference portion of an assembly jig during assembly of the fuel cell. Cisar et al. teach the bonding of fuel cell stacks, in which an assembly jig and a positioning jig are used to keep the fuel cell stack in alignment during assembly. See Example 1. Therefore, it would have been obvious to one of ordinary skill in the art to use an assembly jig during assembly of the fuel cell stack of Warszawski such that the protruding portion of the

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separator is in contact with the assembly jig, because Cisar et al. teach the use of an assembly jig to help align the fuel cell stack.

Furthermore, Warszawski and Cisar do not disclose the jig does not contact a surface on which the protruding portion of the separator is formed. However, it is the position of the examiner that such characteristics are inherent, given the dimensional complexity of the separator (i.e., ledges on different levels) disclosed by Warszawski. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999). Alternatively, it would have been an obvious matter of design choice to one of ordinary skill in the art to design a jig that only contacts the outmost surface of the protruding portion of the separator absent persuasive evidence that the particular configuration of the claimed enclosure is significant. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

With respect to claim 2, Warszawski et al. teach the protruding portion protrudes in a direction perpendicular to the stacked direction of the fuel cell. See column 3, Lines 26-36; Figure 1.

With respect to claim 3, Warszawski et al. teach the fuel cell assembly is sealed by an insulating plastic material. There is no sign that the sealant comes out from the tip portion of the separator. See Column 2, Lines 8-48.

With respect to claim 4, It would have been an obvious matter of design choice to manufacture the protruding portion with a predetermined height, since such a modification would have involved a mere change in the shape of the component. *In re Dailey*, 357 F.2d 669,

149 USPQ 47 (CCPA 1966). It is also the position of the examiner that the criticality on the height of the protruding portion does not provide patentable distinction.

With respect to claim 7, Warszawski et al. teach the separator has a rectangular shape and the protruding portion is formed at the corner portion of the separator. See Figures 1,17.

With respect to claim 8, Warszawski et al. teach the separator has a plurality of protruding portions. See Figures 1,17.

With respect to claim 10, Warszawski et al. teach the protruding portion has a cross-sectional area of rectangle. See Figures 1,17.

With respect to claim 12, Warszawski et al. teach the protruding portion can be located inside of the separator. See Figure 7.

With respect to claim 13, Warszawski et al. teach the separator has a plurality of gas passage. See Figures 12,13.

4. Claims 5,6,14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warszawski et al. (US 4,590,134) and Cisar et al. (US 6,533,827) as applied to claims 1-4,7,8,10-13 above, and further in view of Kato et al. (US 2002/0187384).

Warszawski et al. and Cisar et al. teach a fuel cell stack as described in Paragraph 3 above. However, Warszawski et al. and Cisar do not teach the circumferences of the separators adjacent to each other are different and displaced. Kato et al. teach a seal structure of a fuel cell wherein the adjacent separators have different sizes because the problem associated with bulging of the sealant between separators can be eliminated. See Paragraphs 62,63; Figure 6. Therefore,

it would have been obvious to one of ordinary skill in the art to use separator adjacent to each other having different sizes such that the bulging of the sealant between separators can be eliminated.

5. Claims 1-4,8,9,11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US 6,635,378 B1) in view of Cisar et al. (US 6,533,827).

With respect to claims 1,17, Yang et al. teach a fuel cell stack comprising a plurality of separators (10), wherein the separators have protruding portions which are formed on end portions of the each of the separators. See Figures 1,7. However, Yang et al. do not teach the protruding portion contacts a reference portion of an assembly jig during assembly of the fuel cell. Cisar et al. teach the bonding of fuel cell stacks, in which an assembly jig and a positioning jig are used to keep the fuel cell stack in alignment during assembly. See Example 1. Therefore, it would have been obvious to one of ordinary skill in the art to use an assembly jig during assembly of the fuel cell stack of Yang such that the protruding portion of the separator is in contact with the assembly jig, because Cisar et al. teach the use of an assembly jig to help align the fuel cell stack.

With respect to claim 2, Yang et al. teach the protruding portion protrudes in a direction perpendicular to the stacked direction of the fuel cell. See Figures 1,7.

With respect to claim 3, Yang et al. teach the sealant is provided between the separator and the MEA. There is no indication that the sealant comes out from the tip portion of the separator. See Figures 7-9.

With respect to claim 4, It would have been an obvious matter of design choice to manufacture the protruding portion with a predetermined height, since such a modification would have involved a mere change in the shape of the component. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). It is also the position of the examiner that the criticality on the height of the protruding portion does not provide patentable distinction.

With respect to claim 8, Yang et al. teach the separator has a plurality of protruding portions. See Figures 1,7.

With respect to claim 9, Yang et al. teach the cross section of the protruding portion is substantially circular. See Figures 1,7.

With respect to claim 12, Warszawski et al. teach the protruding portion can be located inside of the separator. See Figure 4.

With respect to claim 13, Yang et al. teach the separator has a plurality of gas passage. See Figures 1,7.

6. Claims 5,6,14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US 6,635,378 B1 and Cisar et al. (US 6,533,827) as applied to claims 1-4,8,9,11-13 above, and further in view of Kato et al. (US 2002/0187384).

Yang et al. and Cisar et al. teach a fuel cell stack as described in Paragraph 5 above. However, Yang et al. and Cisar et al. do not teach the circumferences of the separators adjacent to each other are different and displaced. Kato et al. teach a seal structure of a fuel cell wherein the adjacent separators have different sizes because the problem associated with bulging of the

sealant between separators can be eliminated. See Paragraphs 62,63; Figure 6. Therefore, it would have been obvious to one of ordinary skill in the art to use separator adjacent to each other having different sizes such that the bulging of the sealant between separators can be eliminated.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan  
December 8, 2006



DAH-WEI YUAN  
PRIMARY EXAMINER